University of Idaho
Pedology Laboratory
Soil and Land Resources Division, College of Agricultural and Life Sciences

Soil Series: Brickel Silt Loam
Pedon Number: 81-ID-0551
County: Benewah
Site Information: NRCS # 81-ID-009-1-1 to 5
Elevation: 5440 ft
Slope: 35 %
Aspect: S
Drainage: well drained
Collected by: NRCS personnel, photo no. 6-37-S

Classification: Loamy-skeletal, isotic Vitrandic Haplocryolls
Date Described: 9/8/1981
Location: 0.75 mi S of Rockat Peak; 1800 ft E & 2300 ft N of the SW corner of Sec. 25, T. 47N., R. 1W.
Landform: mountain slope, steep
Parent Material/Geology: ash and loess over metasediments
Vegetation: WBP, XETE, LPP, willow
Soil Temperature:
Soil Moisture:

FIELD DATA:

Lab No.	Horizon	Depth (cm.)	Field Texture	Color		Structure	Consistence			Roots	Pores	Features	Efferv.	Boun-dary
				Dry	Moist		Dry	Moist	Wet					
--	O1	1-0	Slightly decomposed needles, twigs, & leaves, mixed with St. Helen's volcanic ash.											
1	A11	0-8		10YR 4/1	10YR 2/1	1vf & f gr	lo	fr	so sp	3vf &f, 1m	3vf &f t, int.		eo	cw
2	A12	8-20		10YR 4/2	10YR 2/2	1vf & f gr	lo	fr	so sp	3vf & f, 1m	3vf &f t, int.		eo	cw
3	B21	20-43		10YR 5/4	10YR 3/4	1 vf & m sbk	lo	fr	so sp	2vf & f, 1m	2vf &f t, int.		eo	cw
4	C1	43-71		10YR 6/4	10YR 4/4	massive	--	lo	so sp	2vf & f	2vf &f t, int.		eo	gw
--	Cr	71+	Metasedimentary rock											

PHYSICAL DATA:

Lab No.	Particle Size Distribution (mm) – Sand						Silt	Clay	Textural Class	Coarse Fragments[1]	Bulk Density	Water Content		LOI
	VC	C	M	F	VF	Total	Total	Total		(>2 mm)	(Oven-dry)	33 kPa	1500 kPa	(400 °C) OM
	(2.0-1.0)	(1.0-0.5)	(0.5-0.25)	(0.25-0.1)	0.1-0.05)	(2.0-0.05)	(0.05-0.002)	(<0.002)						
	---------- % ----------						%	%		W%	g/cc	----- % -----		%
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1	1.38	0.52	0.62	2.72	5.60	10.82	74.60	14.58	sil	22		62.8	35.1	
2	0.86	0.36	0.42	1.41	6.93	9.99	72.88	17.13	grsil	49		61.1	22.8	
3	1.89	1.81	1.91	7.19	8.31	21.10	68.41	10.49	egrsil	88		50.5	25.9	
4	5.52	5.81	4.28	11.64	9.43	36.68	58.82	4.50	vgrsil	70		28.6	12.3	
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CHEMICAL DATA:

Lab No.	pH 1:5	pH Sat.	pH NaF	Elec Cond	Avail.[2] P	NH_4OAc_{pH7} Exchangeable Cations[3]				Exch. H^+	KCl-Ext. Al^{3+}	CEC_{pH7}	ECEC[4]	Base[5] Sat.	ESP[6]	Org. C	N	C:N
						Ca^{2+}	Mg^{2+}	Na^+	K^+									
				(dS/m)	mg kg^{-1}	---------- $cmol_c\,kg^{-1}$ ----------								---------- % ----------				
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1		5.2	9.2	0.15	1.6	5.1	1.8	0.1	1.2	44.5		35.4		16		10.9	0.60	18
2		5.2	10.7	0.11	0.7	3.4	1.3	0.1	1.0	53.1		37.9		10		8.6	0.49	18
3		5.0	11.7	0.04	3.7	0.5	0.1	0.1	0.3	50.4		27.6		2		6.7	0.45	15
4		5.0	11.4	0.04	7.8	0.1	<0.1	0.2	0.2	24.6		14.5		2		1.9	0.15	13
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CHEMICAL DATA (cont.):

Lab No.	Sat. Paste H_2O	Saturated Paste Extract – Soluble Ions								SAR[7]	Gypsum	$CaCO_3$	P Ret.	CBD		Pyro.		AOD			
		Ca^{2+}	Mg^{2+}	Na^+	K^+	CO_3^-	HCO_3^-	Cl^-	SO_4^{2-}					Fe	Al	Fe	Al	Fe	Al	Si	P
	%	---------- $cmol_c\,kg^{-1}$ ----------									-------- **%** -------		%	---------- **%** ----------							
--																					
1	82													0.98	0.40	0.31	0.40				
2	86													1.55	0.75	0.56	0.62				
3	82													0.95	1.02	0.54	1.06				
4	50													0.90	0.52	0.22	0.39				
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1 Coarse fragments (>2mm) = (wt. coarse fragments >2mm / wt. soil + coarse fragments)*100
Note: This includes gravels, stones, & cobbles, if information is available.

2 Available phosphorus was extracted with 0.7M sodium acetate pH 4.8.

3 Extractable cations ($NH_4OAc_{pH\,7}$) – soluble cations (saturated paste extract) = exchangeable cations Note: units are meq/100g or $cmol_c\,kg^{-1}$
If there are not any soluble cations assume extractable cations are exchangeable.

4 ECEC = Sum of bases + extractable Al^{3+}

5 Base Sat % = (sum of bases/sum of bases + H^+)*100 or (sum of bases/ECEC)*100 or (sum of bases/$CEC_{pH\,7}$)*100

6 ESP = exchangeable sodium percent = (Exchangeable $NH_4OAc_{pH\,7}$ $Na^+/CEC_{pH\,7}$)*100

7 SAR = sodium absorption ratio = $[Na^+]\ /\ (([Ca^{2+}] + [Mg^{2+}])/2)^{1/2}$ Note: conc. are in meq/L

Note: $NH_4OAc_{pH\,7}$ = NH_4OAc at pH 7.0
$CEC_{pH\,7}$ = CEC at pH 7.0
$CEC_{pH\,7}$ solutions were obtained by leaching soil with 10% acidified NaCl. Solutions were analyzed by steam distillation, Technicon Autoanalyzer or by Lachat Quikchem autoanalyzer for $N\text{-}NH_4$.
Nitrogen and CEC were run on the Technicon Autoanalyzer.
Rock is not accounted for in analyses unless noted on the data sheets.
Soil fraction = wt. of soil (g) / wt. of soil + coarse fragments >2mm (g)
A soil without rock (>2mm) would have a soil fraction of 1.